

36. (New) Hardener composition according to claim 33, wherein it comprises a filler in the amount of less than 10% by weight.

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37. (New) Hardener composition according to claim 33, wherein it comprises a filler in an amount of less than 20% by weight.

38. (New) Hardener composition according to claim 33, wherein it is either free from filler or comprises a filler in an amount of less than 10% by weight.

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REMARKS

Claims 16 and 26 have been amended to recite that the hardener can be free from filler. Claim 24 has been amended to correct an inadvertent typographical error. The amendments of claims 16 and 26 as well as the feature in new Claim 31 are supported in the published International application, page 3, line 20 and page 7, line 9. The recitation of Claim 32 is supported by original Claim 16. The recitation of thickener in new independent Claim 33 is supported in the Examples and at page 3, lines 18-19. New Claims 34-36 correspond to previously filed Claims 28-30. New Claims 37 and 38 find support in original Claim 16 and page 3, lines 24-27 of the application.

A marked up copy showing all the changes made to Claims 16, 24, and 26 relative to the previous versions of these claims is submitted as ATTACHMENT A.

Claims 16-30 have been rejected by the Examiner under 35 U.S.C. §103(A) as being unpatentable over Vesterlund et al (US 6,284,090) in view of Andersson (US 4,175,065).

The present invention relates to a method of separate application of components of an amino resin based gluing system and a hardener composition for use in the method. The problem to be solved by the present invention is how to provide an amino resin based gluing system for separate application of gluing components, giving joints with high strength and a possibility to obtain a desired assembly time. This problem is solved by the invention by the method defined in claims 16-26 using a hardener composition defined in claims 27-30 having no filler or a low content of filler, combined with a volatile acid. It has before been regarded as advantageous to acid filler in higher amounts than defined in the present invention to achieve good adhesive properties for amino resin based gluing systems.

Vesterlund et al (US 6,284,090) discloses a method for supplying a multi-component fluid thermosetting resin gluing system. A stream of a second fluid component encircles a stream of a first fluid component. Examples of gluing systems suitable for the method are mentioned, for example, urea-formaldehyde resin based or melamine-formaldehyde resin based gluing systems.

However, nothing is mentioned about the content of filler in the hardener composition being less than 20 weight %. In fact, any effect from different filler contents is not discussed at all. Thus, claims 16-30 of the present invention are novel and inventive in view of Vesterlund et al along, as already acknowledged by the Examiner.

Andersson (US 4,175,065) describes a method for gluing formaldehyde based adhesives and a curing composition. Paraformaldehyde is used as a hardener, and it is mentioned that a filler can be used in the hardener composition to alter its

viscosity or volume. However, only phenolic resins are discussed, such as resorcinol-formaldehyde or resorcinol-phenol precondensates. The problem discussed by Andersson is completely different from the present invention, namely, how to use paraformaldehyde in a better way to achieve better adhesive joints. Consequently, the problem solved by the present invention is not at all discussed in the reference. Andersson discloses nothing at all about amino resin based gluing systems or any hardener composition intended to harden an amino resin according to the present invention. Thus, claims 16-30 of the present invention are novel and inventive in view of Andersson alone, as already acknowledged by the Examiner.

The Examiner states that the combination of teachings from Vesterlund et al and Andersson renders all claims obvious. More specifically, the Examiner argues that since a filler may be used in the formaldehyde based hardener composition for a phenolic resin of Andersson, a person skilled in the art would expect it to perform in the same way in a hardener composition based on a volatile acid for an amino resin according to the present invention. The examiner's reasoning is that both phenolic and amino resin based gluing systems could allegedly be used in the method of Vesterlund et al. Applicants respectfully disagree.

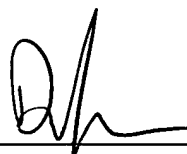
As described in the application, prior art hardener compositions for amino resin based gluing systems comprise filler in an amount of more than 20 weight %. It is common in the art to use filler in an amino resin based adhesive system in order to improve the quality of the adhesive bond or to prevent too high penetration of adhesive and hardener into the wood. According to the invention, it has surprisingly been shown in Example 1 that when using a filler content of less than 20 weight % in the

present method of separate application a higher strength s achieved as compared with higher filler contents. Thus, the method of the present invention concerning separate application of an amino resin based gluing system benefits from the use of a hardener comprising a volatile acid and having a filler content of less than 20 weight %. A person skilled in the art is not provided with any guidance whatsoever from Andersson that a filler content of less than 20 weight % in a hardener composition is desirable for amino resin based gluing systems. The general information in Andersson that a filler can be used in a phenolic resin based gluing system in amounts of 0-50% to adjust viscosity does not give any hint of which amounts are suitable in an amino resin based gluing system to be used in separate application of the adhesive components to achieve high quality adhesive bonds.

Thus, none of the cited references gives any hint, taken alone or in combination, of providing a method or a hardener composition according to the present invention.

The Commissioner is hereby authorized to charge any fees associated with this communication or which otherwise may be required in this application to Deposit Account No. 501348. This sheet is submitted in duplicate.

Respectfully submitted,



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ATTACHMENT A

16. (Amended) A method of separate application of resin and hardener components of an amino resin gluing system onto a substrate, wherein the hardener is either free from filler or comprises a filler in an amount of less than 20% by weight and a volatile acid, wherein the components of the gluing system are applied in the form of strands or by means of spraying, or any combination thereof, in optional order of application.

24. (Amended) A method according to claim 16, wherein the weight ratio of hardener to resin is [1:3,5-1:2] 1:3.5-1:2.

26. (Amended) A method according to claim 16, wherein the hardener is either free from filler or comprises a filler in an amount of less than 10% by weight.